USCIS/SPAS:
Product Backlog Items and User Stories

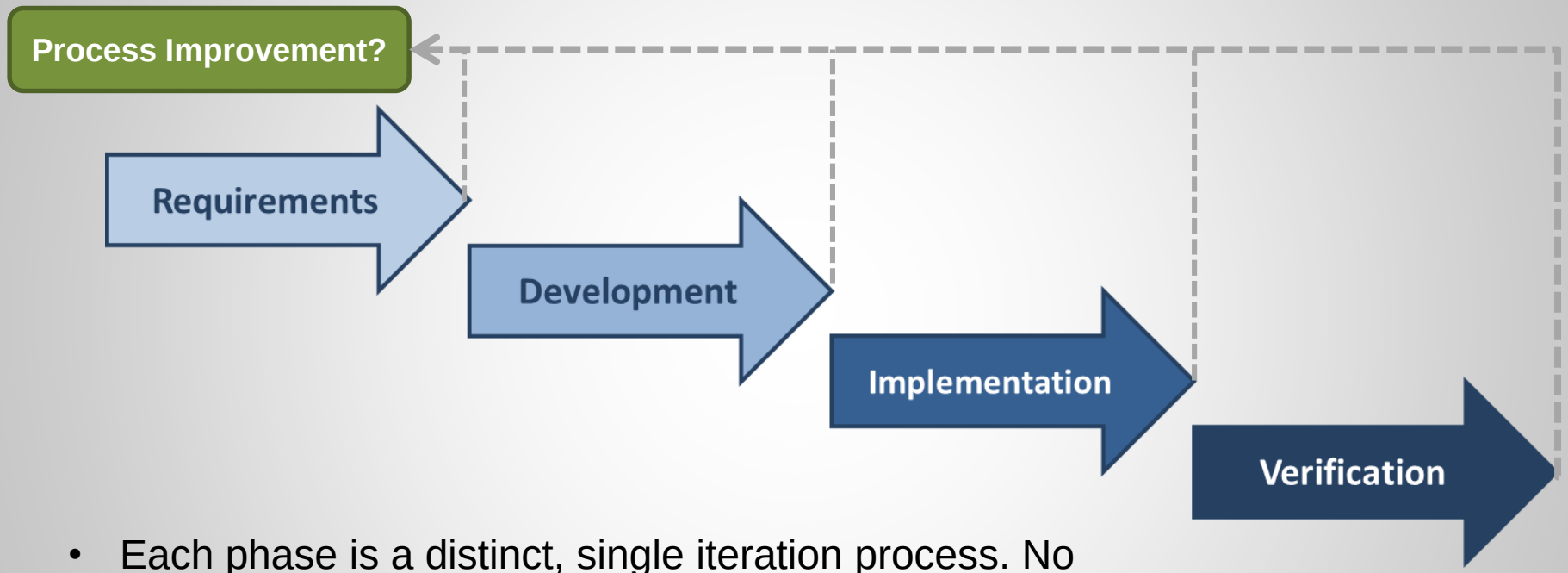
4/16/2015

Dr. Patrick McConnell

First, an old joke…..

I can't identify an original source for this cartoon. As best as I can tell, the art in the version I use is owned by Paragon Innovations, Inc., ©2005: www.paragoninnovations.com/ng4/guide.shtml

Agile Orientation
Waterfall Model



- Each phase is a distinct, single iteration process. No phase is begun until the prior phase is complete.
- Phases may span long periods of time, and represent completely different investments.

Agile Orientation
Why Waterfall Fails

Why do Waterfall Projects become 'Tire Swing' failures?

1. **It's impossible to gather *all* necessary requirements at the start of the project.**

2. **Many of the requirements you *can* gather will change along the way.**

3. **There's always more work than time or budget allow.**

Stolen from Jonathon Rasmussen's *The Agile Samurai (2010)*

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Agile Orientation
Agile Development Manifesto

1. **Individuals and Interactions**

   over processes and tools.

2. **Working Software**

   over comprehensive documentation.

3. **Customer Collaboration**

   over contract negotiation.

4. **Responding to Change**

   over following a plan.

Agile Orientation

ADM: Supporting Principles

1 Our highest priority is to satisfy the customer through early and continuous delivery of valuable software.	5 Build projects around motivated individuals. Give them the environment and support they need, and trust them to get the job done.	9 Continuous attention to technical excellence and good design enhances agility.
2 Welcome changing requirements, even late in development. Agile processes harness change for the customer's competitive advantage.	6 The most efficient and effective method of conveying information to and within a development team is face-to-face conversation.	10 Simplicity--the art of maximizing the amount of work not done--is essential.
3 Deliver working software frequently, from a couple of weeks to a couple of months, with a preference to the shorter timescale.	7 Working software is the primary measure of progress.	11 The best architectures, requirements, and designs emerge from self-organizing teams.
4 Business people and developers must work together daily throughout the project.	8 Agile processes promote sustainable development. The sponsors, developers, and users should be able to maintain a constant pace indefinitely.	12 At regular intervals, the team reflects on how to become more effective, then tunes and adjusts its behavior accordingly.

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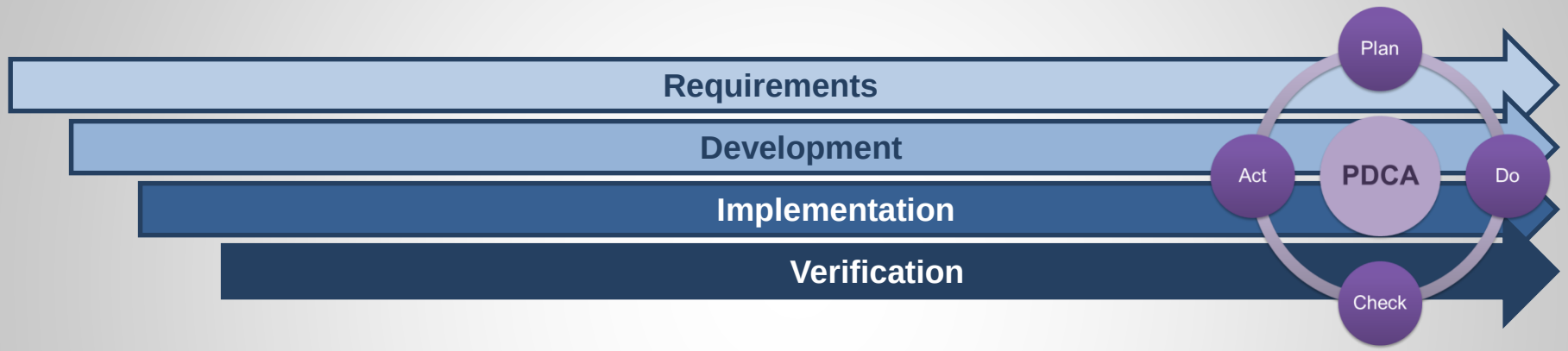
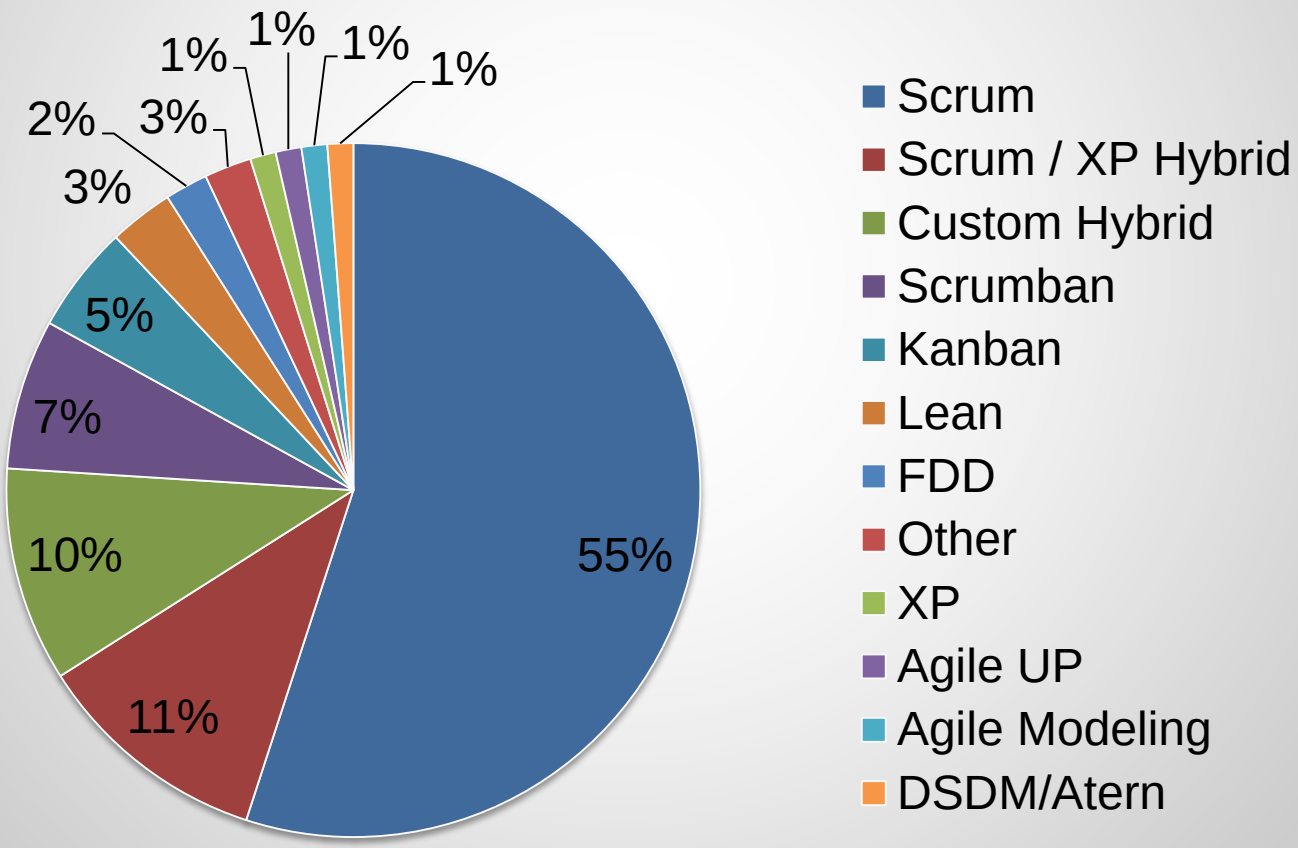
Agile Orientation
How Agile Models Work



- Each major activity occurs concurrently, organized into cycles
- Work is continuous, with frequent small deliveries that add up to releases
- Customers have frequent opportunities to interact with slices of product
- Changes in Customer Need, Team Adaptations, and Process Improvements are immediately integrated into the next iteration

Agile Orientation
Prevailing Models

Source: stateofagile.versionone.com



Agile Orientation
EPC

All Agile approaches are rooted in

***E**mpirical **P**rocess **C**ontrol:*

Decision making based on measured experience

Three Legs of EPC:

1. **Transparency**: process and performance are visible and participants have common understanding
2. **Inspection**: performance is observes and causes for specific outcomes are determined
3. **Adaptation**: processes and tools are continually adjusted to improve performance

Agile Orientation
Myths

The Negative:

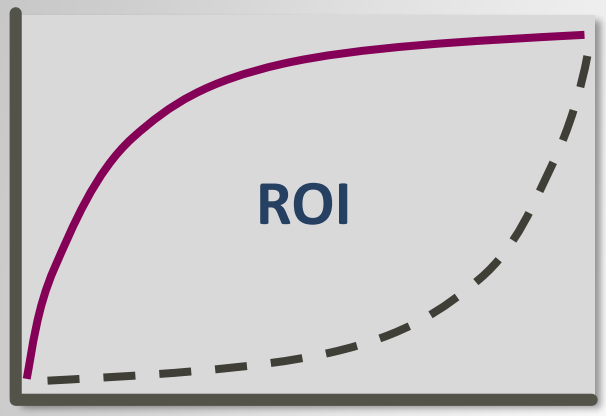
- No documentation
- No formal scope
- Doesn't work on FFP contracts
- License to Creep Scope
- Incompatible with Gov SELC
- Incompatible with CMMI Lvl 3+
- Cover for Cowboy Coding

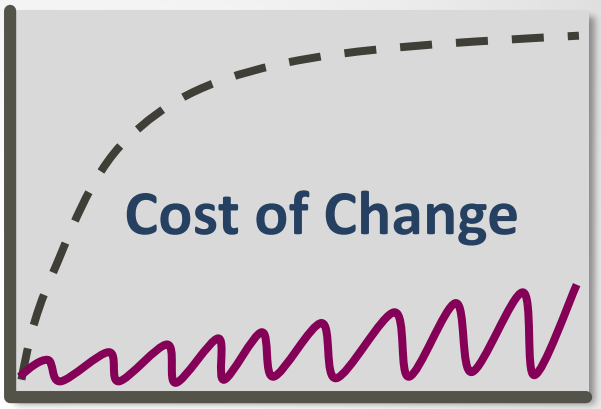
The Positive:

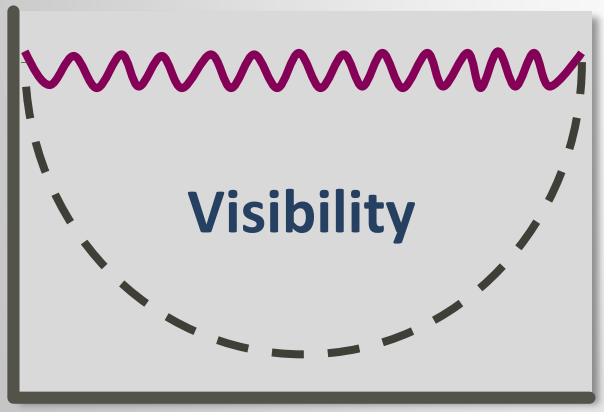
- Works on any project
- Fixes dysfunctional structure
- Solves resource disputes
- Removes dependencies on specific expertise
- Guarantees High ROI
- Eliminates Risk

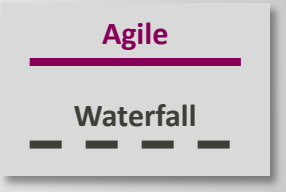
Heard any others?

Agile Orientation
Snapshot Comparisons









Stolen from:
www.versionone.com/Agile101/Agile-Software-Development-Benefits/

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What is Scrum?

Scrum emphasizes fixed iteration parameters to enable frequent delivery

- **Small, Fixed Teams**
- **Short, Fixed duration increments**
- **Compressed, Cyclical Planning**
- **Validation of Product Vision and Realization**

“Scrum?”

Scrums are a method of restarting play in Rugby

What matters for our purposes:

-highly structured rules of engagement

-shared understanding of a common goal

-teams self organize to win

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Scrum Applicability:
When should we use it?

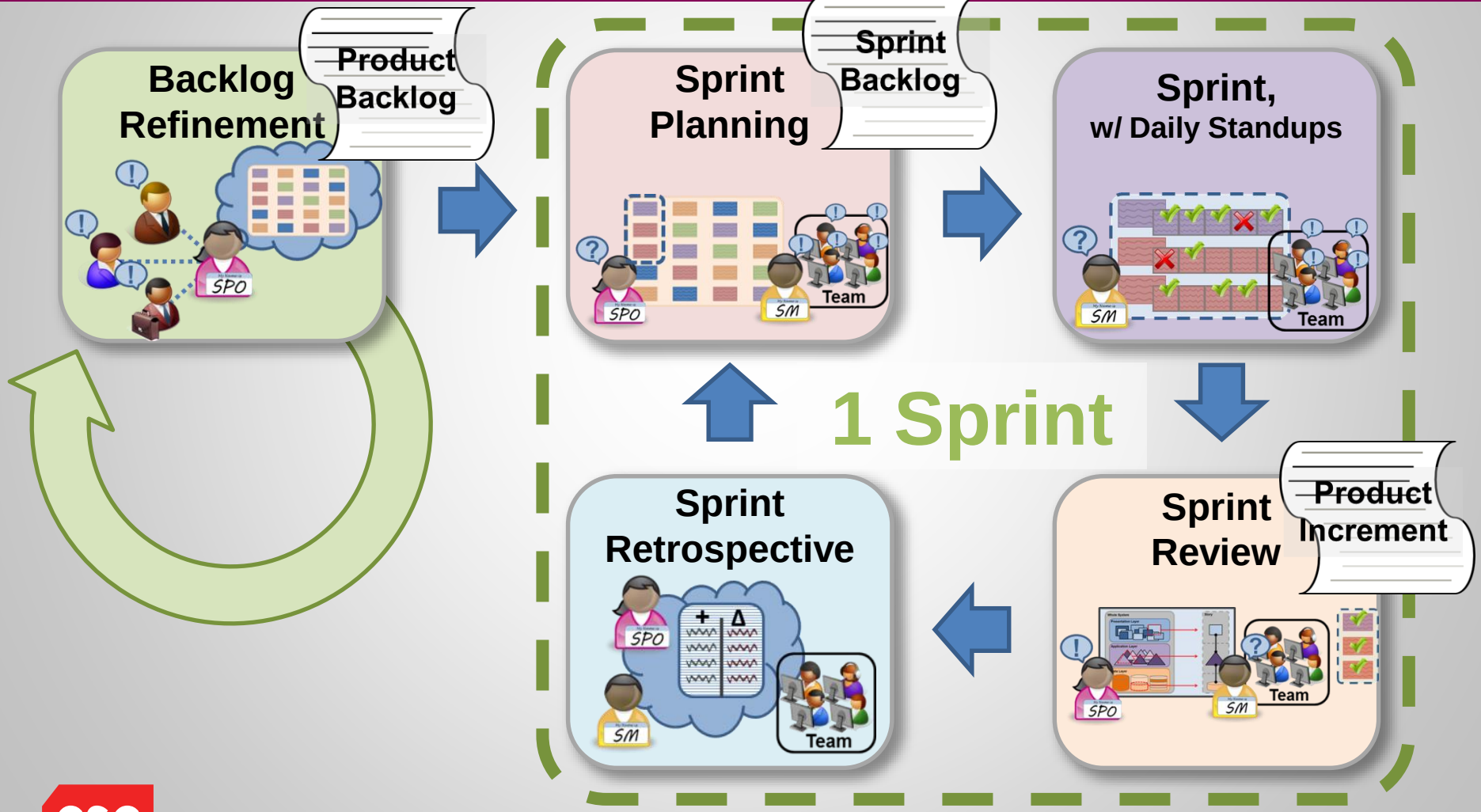
Great when:

- **Have User Relationships**
- **Building Something**
- **New Endeavor**
- **Work Can Be planned**
- **Empowered POs**
- **Dedicated Teams**
- **Cross Functional Teams**

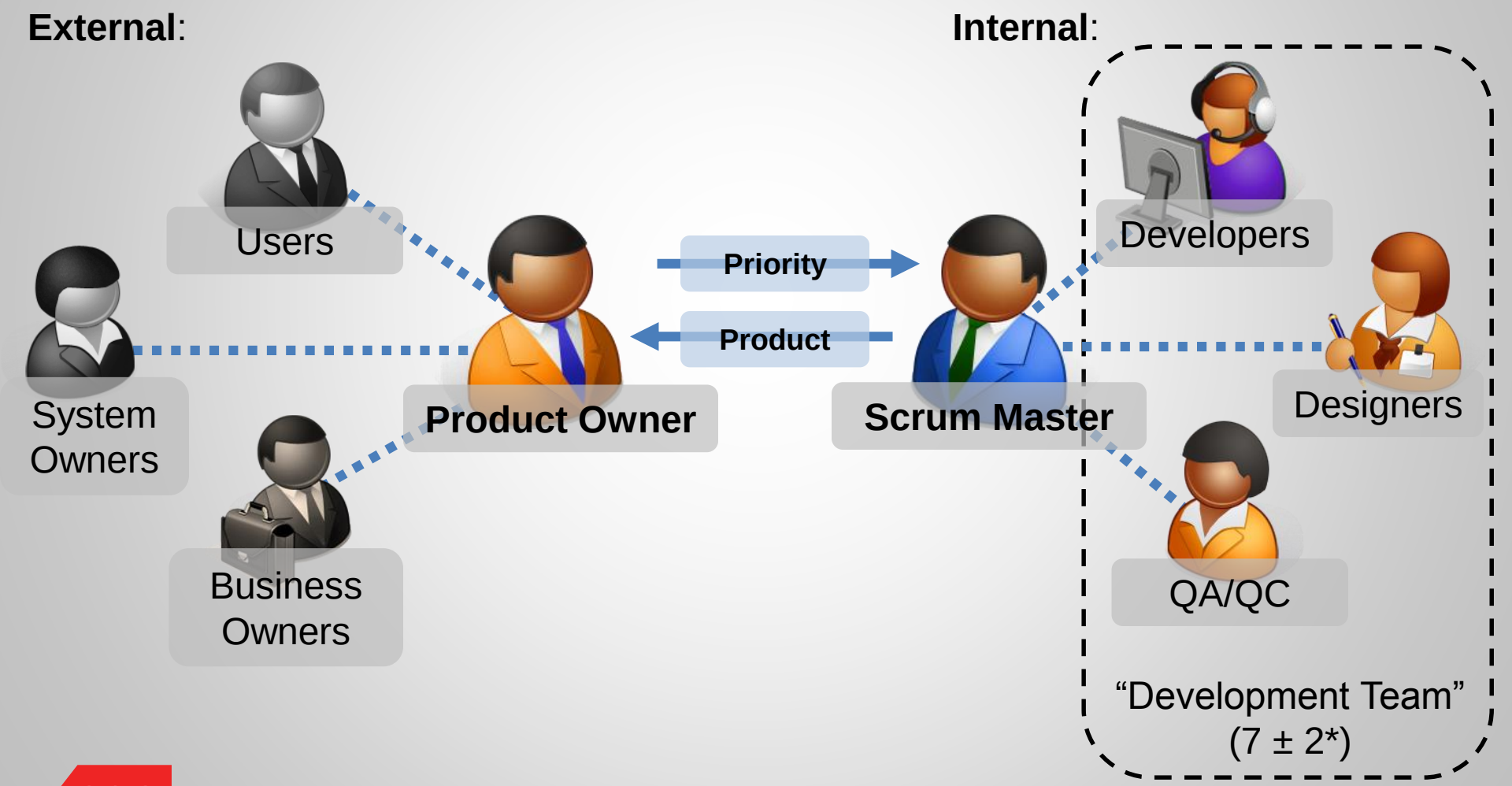
Tough when:

- **Low trust**
- **Just Keeping Lights On**
- **Highly Repetitive**
- **Work Can’t Be Planned**
- **All Choice By Committee**
- **Everybody is Matrix**
- **Silo Teams**

Scrum Mechanics
The Scrum Cycle



Scrum Mechanics
Participants



Scrum Roles
Development Team

Prior Titles:
- Developer
- Database Architect
- Designer
- Security Specialist
- Tester
- Quality Assurance

Authority:
- How to deliver
- Tasking

Responsibilities:
- Self Organization
- Deliver Product Increment
- Be Cross Functional
- Open communication with Team
- Manage Sprint Backlog and Tracking
- Whole team accountability

Scrum Roles
Scrum Master

Prior Title:
- Developer (or other Tech)
- Project Manager

- ***Scrum Master***

Authority:
- Enforce Scrum Process

(no formal authority over Team or PO)

Responsibilities:
- Facilitate Scrum Process
- Act as Change Agent
- Serve Product Owner and Team
- Remove Impediments
- Coaching Scrum Practice
- Protect and Guide Team

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Scrum Roles
Product Owner

Prior Titles:
- Project Manager
- Relationship Manager
- Account Executive
- Program Manager
- ***Client?***

Authority:
- Backlog contents
- Backlog order
- Abort Sprint
- Release Plan

Responsibilities:
- Clearly expressing Backlog Items
- Prioritizing Product Backlog Items
- Optimizing the value of Team's work
- Ensures Product Backlog is transparent
- Ensures Team understands Backlog Items to level needed

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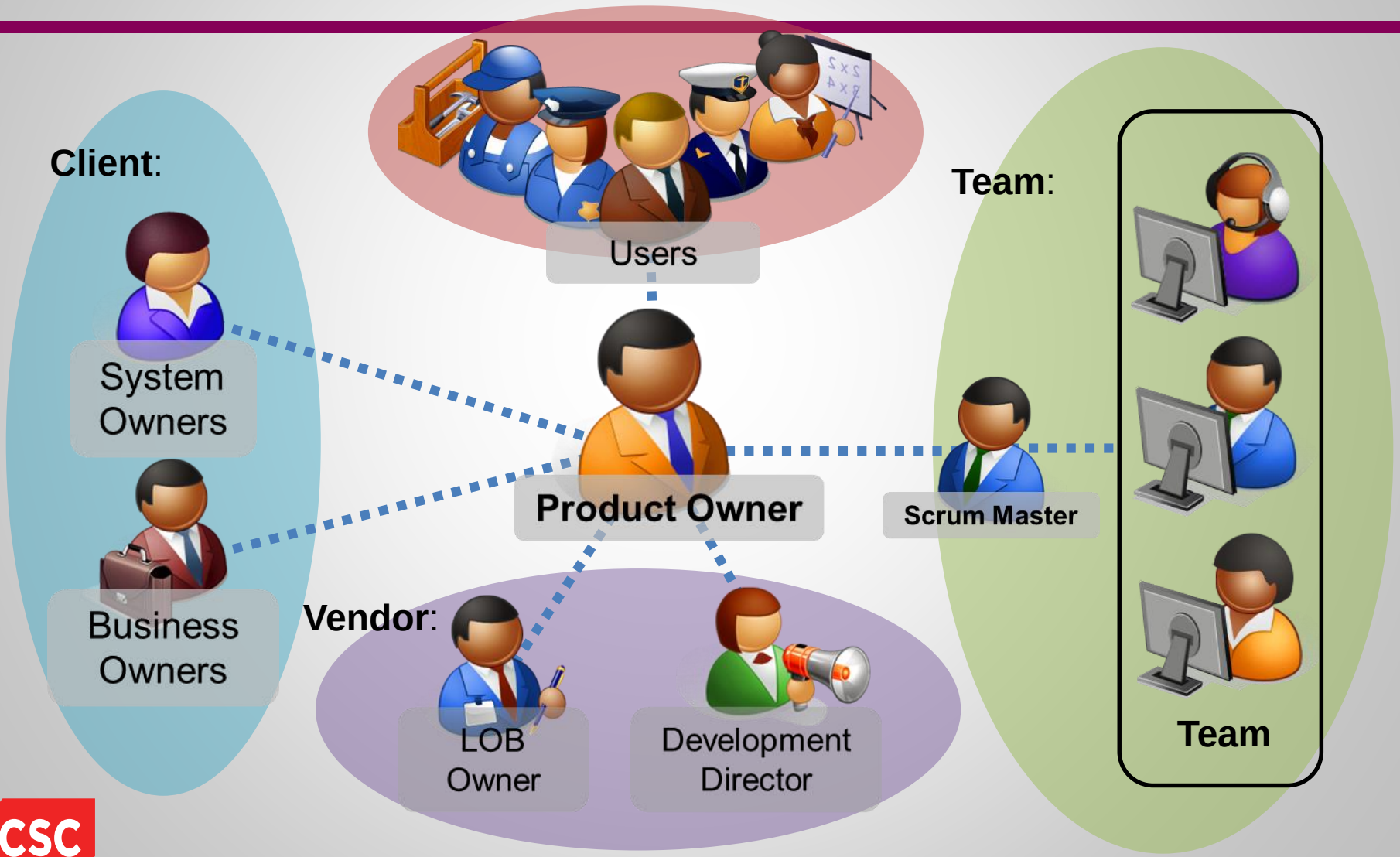
The Importance of the Scrum Product Owner

In many ways, the efficacy of the SPO is the core determinant of success in any Scrum practice.

Why?

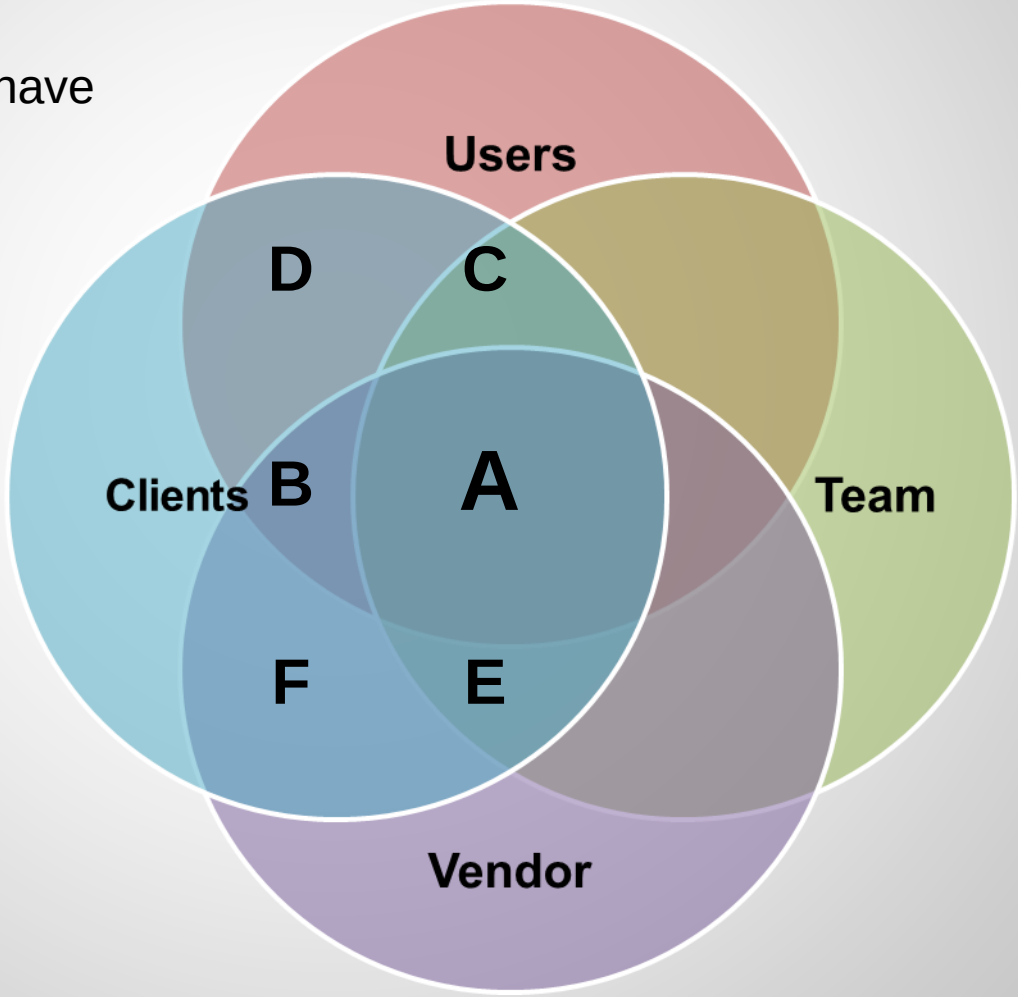
It doesn't matter how matter good the Team and Scrum Master are, if the SPO is telling them to build the wrong things in the wrong order

Product Backlog
SPO as Focal Point



Product Backlog
Requirement Sources

Which areas are likely to have the highest project value?



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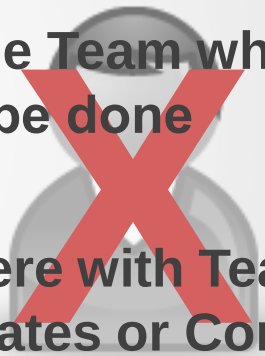
The PO in Scrum:
What Makes a Good SPO?

Does:

- Correctly derives a product vision that will deliver value
- Facilitates a Product Road Map to Achieve that Vision
- Sets the Team up for Success
- Trusts the Team to deliver defined objectives

Doesn't:

- Try to be the Team's Boss
- Tell the Team what can and can't be done
- Interfere with Team Estimates or Commitments
- Try to change Sprint Parameters mid-stream



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How Scrum Works:
What's a Backlog Item?

A **Product Backlog Item** is a potential piece of work.

Most often, PBIs will be:

1. Features, with clear business value

but they could also be:

2. Bugs
3. Technical Work
4. Knowledge that enables one of the above

(courtesy Mike Cohn, www.mountaingoatsoftware.com)

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Product Backlog
Question:

What's the difference between a
Requirement and a **Product Backlog Item**?

Requirements are statements of need, but aren't necessarily actionable:

> "**6.1.2:** Vendor shall integrate prevailing private sector Identity and Access Management (IDM) solutions to effect wide scale public adoptability.

Backlog Items *are specific, work-ready goals with clear definitions of done:*

"User Login"
ID: 215 2/5/2012

Descriptions:
As a ***customer***, I should be able ***to use my existing 'MyFace' account to log in to the site***, so I can ***minimize the number of sites that store my personal info***.

Acceptance Criteria:
1. Do not store user account details.
2. Utilize MyFace's IDM API
3. Method extensible to other IDM APIs

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Common Practice:
User Story as PBIs

One way of writing Feature PBIs is as **User Stories**, straightforward statements of capabilities.

[Story Title]

ID: # [date] [created by]

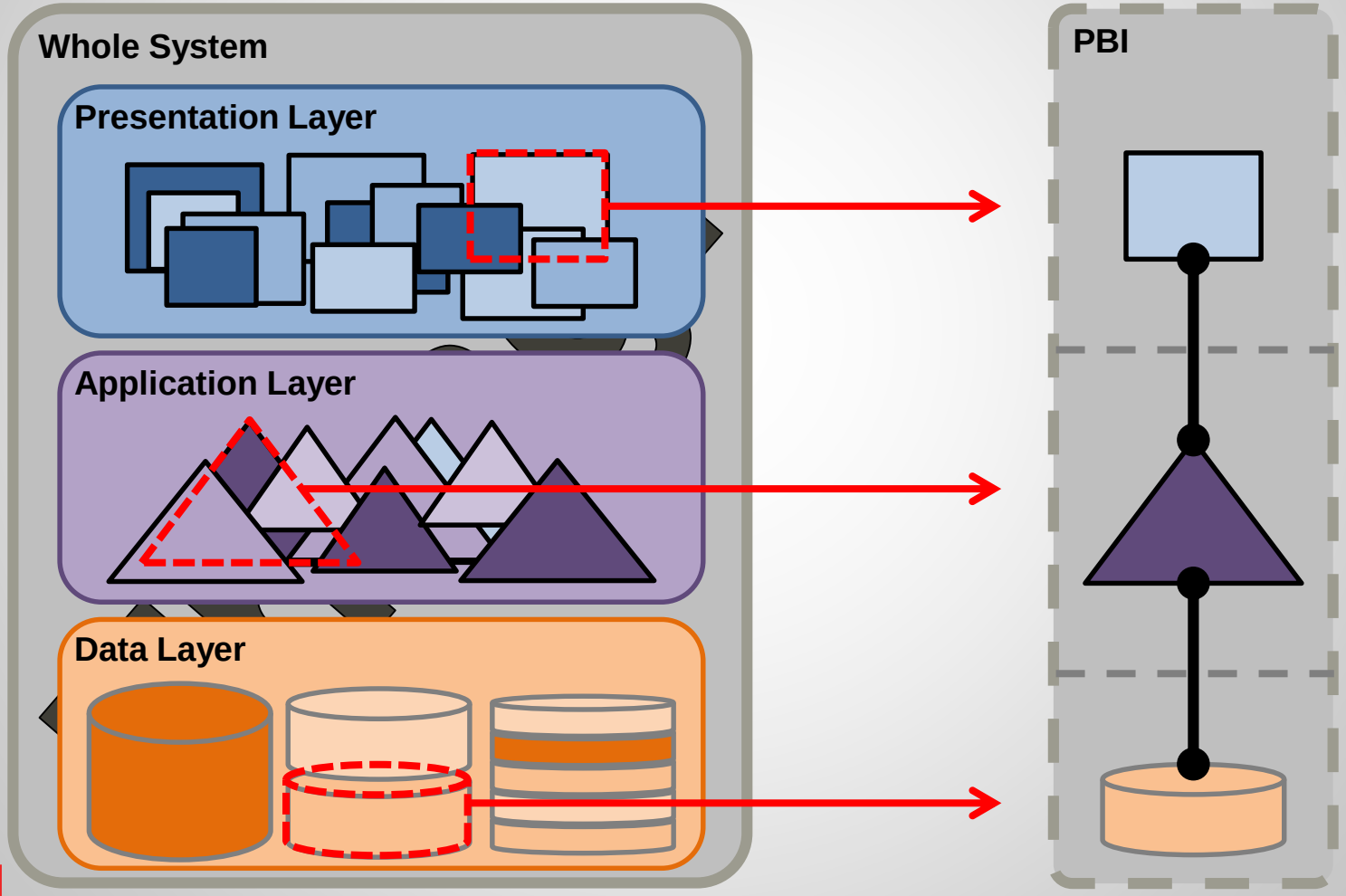
Description:
As a [role], I should be able to [capability], to enable [business value].

Acceptance Criteria:
1. [thing]
2. [thing]

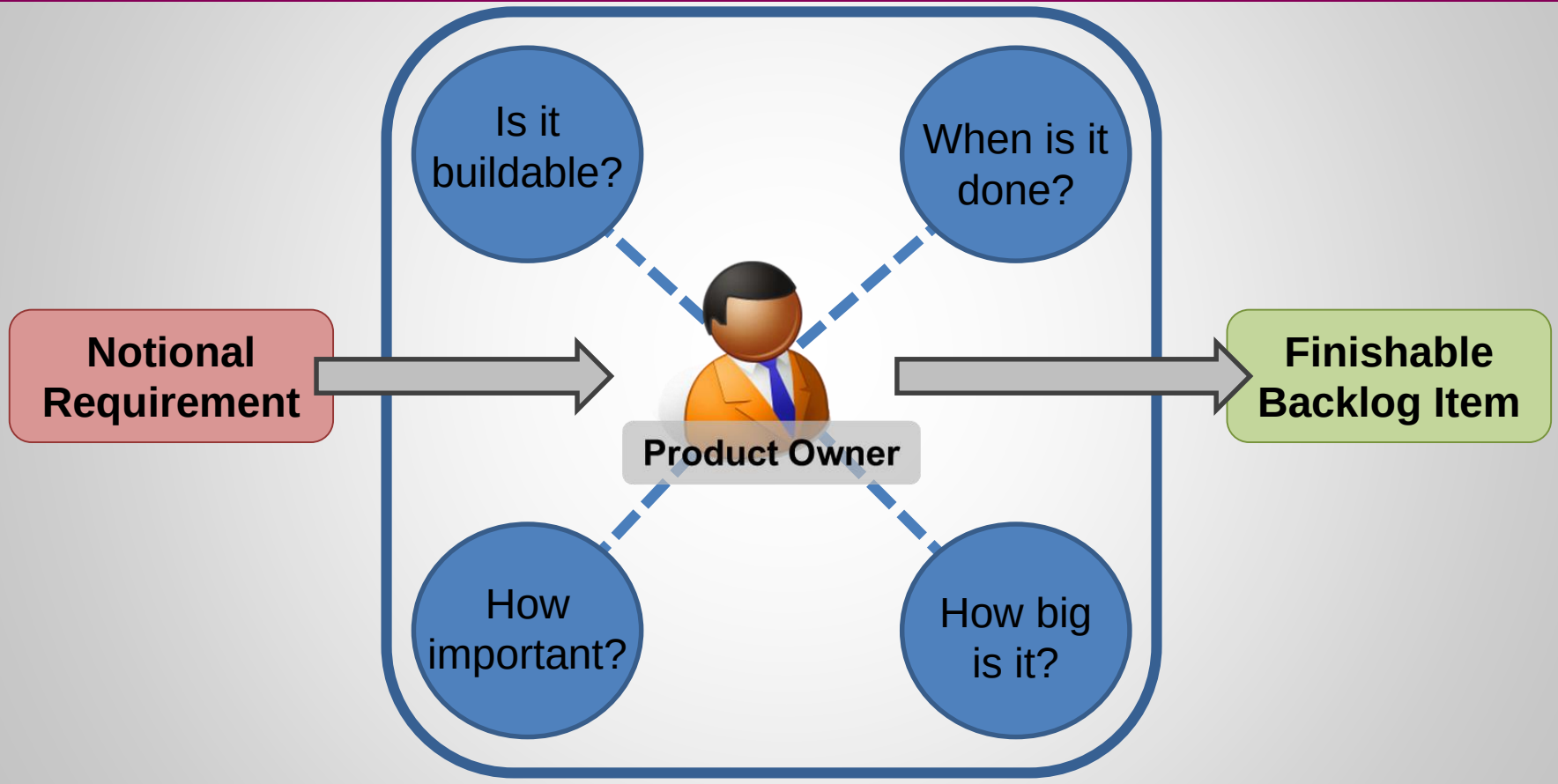
As a ***customer***,
I should be able ***to use my existing 'MyFace' account to log in to the site***,
so I can ***minimize the number of sites that store my personal info***.

Not Core Scrum

Product Backlog
Vertical Product Slices



Product Backlog
PBI Lifecycle



This PBI Development Lifecycle takes place ***in front of*** the Scrum Cycle.

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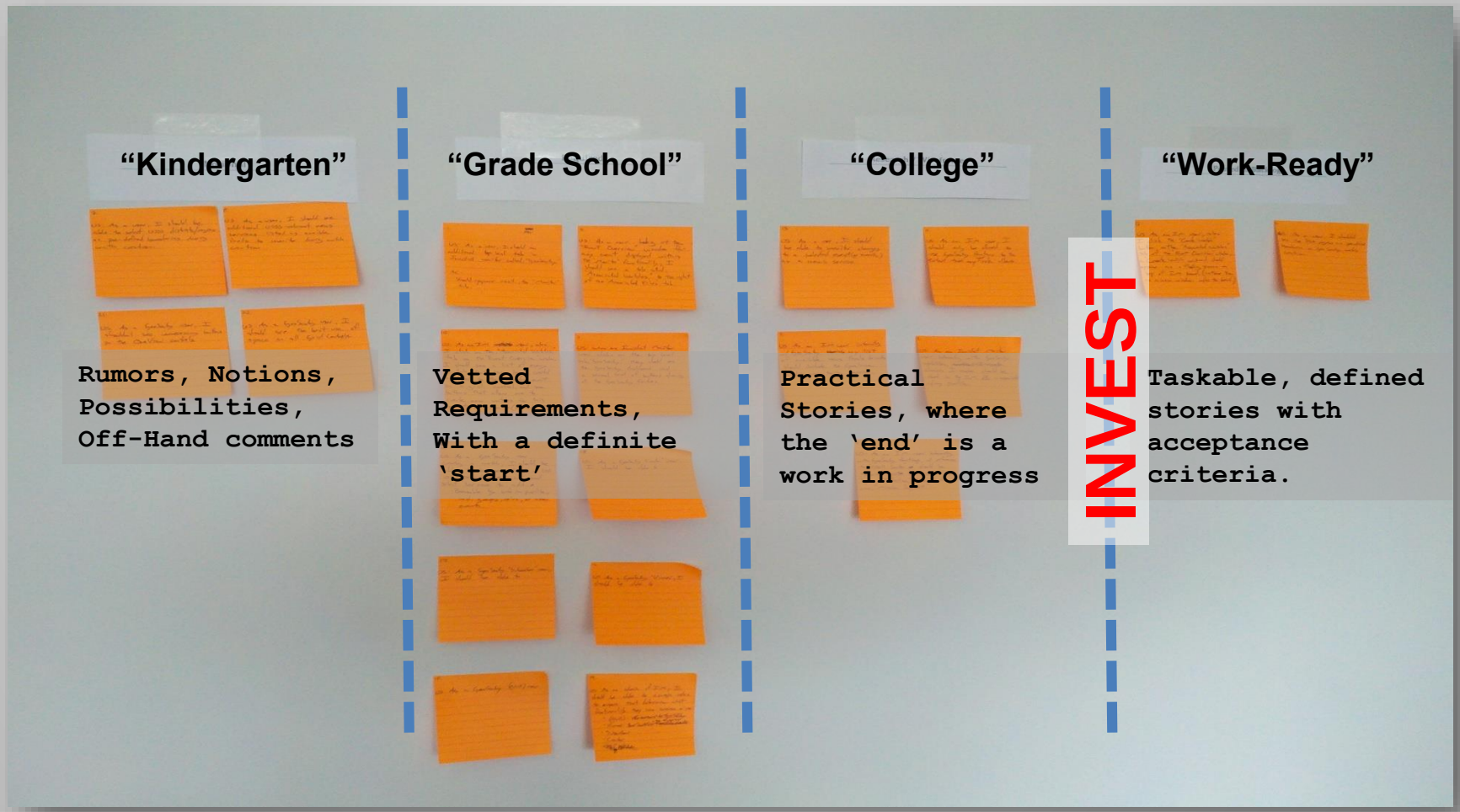
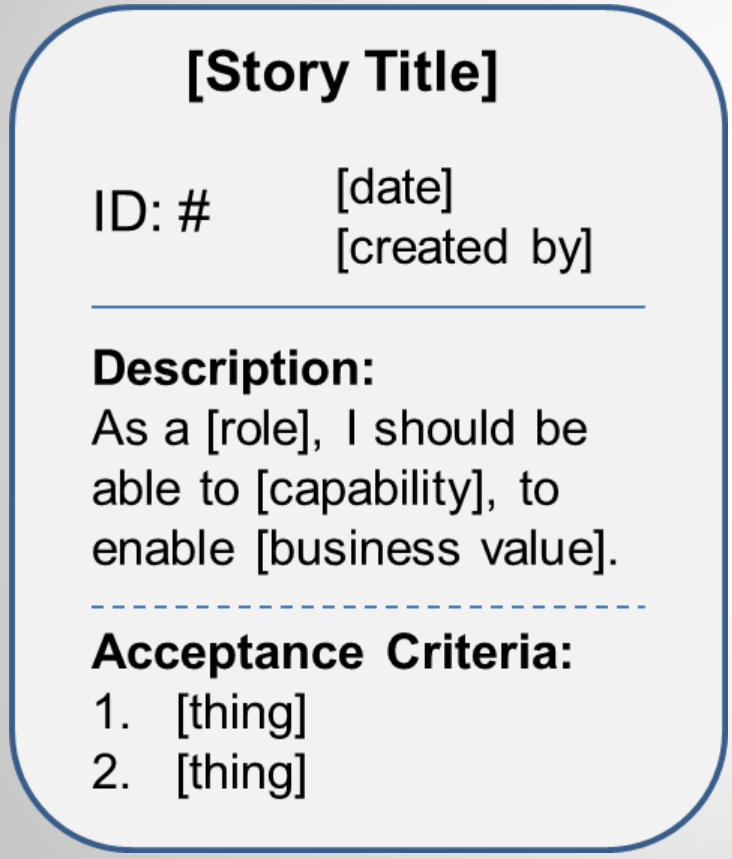
Product Backlog
Managing PBI Elaboration



Product Backlog
Good Backlog Items



"INVEST" model:

- **I**ndependent
- **N**egotiable
- **V**aluable
- **E**stimate-able
- **S**mall
- **T**estable

(Bill Wake)

Product Backlog
Good Acceptance Criteria

Basic Considerations:

- **Acceptance Criteria** are not optional
- **Acceptance Criteria** often require several different SMEs
- **Acceptance Criteria** should be pass/fail outcomes

Cucumber Template:

Given: [Condition 1]
and: [Condition 2]
and: [Condition 3],

When: [Event],

Then: [Outcome 1]
and: [Outcome 2]

Example:

*"As a **new user**, I should be able to **create an account using my existing MyFace account as credentials**, so that **I can bypass entering my personal data.***

AC:
***Given** I pass valid MyFace Account Details,*
***When** the MyFace IDM service validates the credentials,*
***Then** the site should create a new user account with [name], [age], and [residence] data returned from MyFace.*

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